CIGNA MEDICAL COVERAGE POLICIES

Cerebrovascular Intervention

Effective Date: October 1, 2025

Instructions for use

The following coverage policy applies to health benefit plans administered by Cigna. Coverage policies are intended to provide guidance in interpreting certain standard Cigna benefit plans and are used by medical directors and other health care professionals in making medical necessity and other coverage determinations. Please note the terms of a customer's particular benefit plan document may differ significantly from the standard benefit plans upon which these coverage policies are based. For example, a customer's benefit plan document may contain a specific exclusion related to a topic addressed in a coverage policy.

In the event of a conflict, a customer's benefit plan document always supersedes the information in the coverage policy. In the absence of federal or state coverage mandates, benefits are ultimately determined by the terms of the applicable benefit plan document. Coverage determinations in each specific instance require consideration of:

1. The terms of the applicable benefit plan document in effect on the date of service
2. Any applicable laws and regulations
3. Any relevant collateral source materials including coverage policies
4. The specific facts of the particular situation

Coverage policies relate exclusively to the administration of health benefit plans. Coverage policies are not recommendations for treatment and should never be used as treatment guidelines.

This evidence-based medical coverage policy has been developed by EviCore, Inc. Some information in this coverage policy may not apply to all benefit plans administered by Cigna.

These guidelines include procedures EviCore does not review for Cigna. Please refer to the **Cigna CPT code list** for the current list of high-tech imaging procedures that EviCore reviews for Cigna.

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General Information

Guideline Page

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Glossary

Terms and abbreviations

Aneurysm	Defined as a diameter 1.5x the normal arterial diameter.
Angioplasty	A procedure that utilizes a catheter with a balloon that is inflated to enlarge a stenotic area.
Ankle-Brachial Index (ABI)	Ratio of the systolic blood pressure (SBP) measured at the ankle to the brachial (arm) SBP.
Atherectomy	A procedure that utilizes a catheter with a sharp blade or laser on the end of the catheter to remove plaque from a blood vessel.
Crescendo TIA	Multiple recurrent episodes of TIA over hours to days.
Critical limb ischemia	Severe stenosis or occlusion in the vessels supplying the lower extremity such that limb loss will result without treatment. Symptoms of critical limb ischemia in the lower extremities include but are not limited to non-healing wounds, gangrene and ischemic rest pain.
Dissection	Disruption of the media layer of the aorta with bleeding within and along the wall of the aorta.
Graft	Synthetic material used to replace or repair a segment of an artery or bypass an occluded segment of artery.
High-grade stenosis	A high-grade stenosis is defined as at least a 50% narrowing of an artery.

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Ischemic rest pain	Pain arises from severe arterial occlusive disease in the lower extremities such that the patient experiences pain in the distal aspect of the foot and toes while the limb is in the supine position as would occur with sleep. The pain is relieved with the limb in the dependent position or "dangling from the bed" as the limb is depending on gravity to assist with perfusion.
NASCET	North American Symptomatic Carotid Endarterectomy Trial
Pseudo-aneurysm	Outpouching of blood resulting from disruption of the arterial wall with extravasation of blood contained by periarterial connective tissue and not by the arterial wall layers.
PTA	Percutaneous transluminal angioplasty.
Spider veins	Enlarged, tortuous veins that are usually distributed in a web like cluster. These veins are typically ‹3mm in diameter.
Stent	A metal scaffold placed inside the artery to maintain patency.
Stent-graft	A metal scaffold covered by fabric material placed inside an artery.
Symptomatic carotid stenosis	Characterized by either a transient ischemic attack or cerebrovascular accident that is in the distribution of known severe carotid stenosis, e g. transient right sided upper and lower extremity paralysis in the setting of 70% left internal carotid artery stenosis.
Symptomatic aneurysm	Unrelenting non-positional back pain in the setting of a known abdominal or thoracic aortic aneurysm. Patients with a symptomatic aneurysm may or may not have evidence of a free or contained rupture. The presence of symptoms indicate impending rupture.
Varicose veins	Enlarged, tortuous veins often caused by incompetent valves. Veins are typically ≥3mm in diameter.

Velocity ratio (V1/V2)	Ratio of peak systolic velocity in the diseased segment of blood vessel demonstrating elevated flow velocities to the peak systolic velocity of blood flow in normal vessel just proximal to area of concern in arteries, or just distal in veins.
Venous reflux	Characterized by incompetent or "leaky" valves that no longer function as one-way valves facilitating the flow of blood from the lower extremities to the heart. This results in pooling of blood in the lower extremities leading to distended engorged veins when the lower extremities are in the dependent position as in sitting or standing.

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General Information for Vascular Intervention Requests

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Documentation Requirements for Vascular Intervention Requests

Documentation needed to complete a prior authorization request for vascular intervention include **all** of the following:

- Procedure proposed
- Condition being treated
- Detailed documentation of provider-directed conservative treatment, duration and frequency of treatment, and the response to such treatments, if applicable
- Detailed documentation of any previous intervention and the response
- Detailed documentation of location and size of aneurysmal disease, if present
- Detailed documentation regarding nature of the critical limb ischemia: non-healing wound or ischemic rest pain, if applicable
- Recent (within 6 months) written reports of any of the following diagnostic imaging modalities and studies acceptable for purposes of the peripheral vascular intervention guidelines:
  - Ankle-brachial indices, segmental pressures and pulse volume recordings as applicable
  - Duplex ultrasound including carotid, lower extremity and abdominal
  - CTA or CTV abdomen/pelvis with or without lower extremity run-off
  - MRA or MRV abdomen/pelvis with or without lower extremity run-off
  - Arteriogram or venogram
  - IVUS – intravascular ultrasound
- Recent (within 6 months) clinical evaluation documenting:
  - Symptoms (if lifestyle-limiting, detailed documentation regarding quality-of-life parameters that are affected)
  - Physical exam findings to include location and size of ulcers

Emergent and Urgent Requests

Individuals being evaluated for vascular/endovascular surgery should be screened for the presence of a medical condition that warrants urgent/emergent definitive surgical treatment. Provider directed non-surgical management is **not** required when there is

documentation, supported by imaging studies or clinical assessment, of any of the following urgent/emergent conditions:

- Critical limb ischemia
- Symptomatic carotid stenosis
- Crescendo TIA's (multiple recurrent episodes of TIA over hours to days)
- Symptomatic or ruptured aneurysms

An urgent/emergent request based on 2018 NCQA standards for utilization management occurs when the time frame for making routine or non-life-threatening determinations on care **either**:

- Could seriously jeopardize the life, health, or safety of the member or others, due to the member's psychological state
- In the opinion of a practitioner with knowledge of the member's medical or behavioral condition, would subject the member to adverse health consequences without the care or treatment that is the subject of the request.

Procedures to treat arterial disease may be indicated on an intra-operative basis

Background and Supporting Information

Prior-authorization requests should be submitted at least two weeks prior to the anticipated date of an elective surgery.

Cerebrovascular Intervention

Cerebrovascular Endovascular Embolization and Stents

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Procedures Included

- Endovascular procedures may include:
  - Embolization (including coiling)
  - Balloon angioplasty
  - Stent placement
  - Flow diverters

Cerebrovascular Embolization and Stent

Procedure Description	CPT®
Transcatheter permanent occlusion or embolization (e.g., for tumor destruction, to achieve hemostasis, to occlude a vascular malformation), percutaneous, any method, central nervous system (intracranial, spinal cord)	61624
Balloon angioplasty, intracranial (e.g. atherosclerotic stenosis), percutaneous [not covered for prophylactic percutaneous transluminal angioplasty of intracranial arteries after aneurysmal subarachnoid hemorrhage] [dual diagnosis needed – subarachnoid hemorrhage and ischemia]	61630
Transcatheter placement of intravascular stent(s), intracranial (e.g. atherosclerotic stenosis), including balloon angioplasty if performed [not covered for prophylactic percutaneous transluminal angioplasty of intracranial arteries after aneurysmal subarachnoid hemorrhage] [dual diagnosis needed – subarachnoid hemorrhage and ischemia]	61635
Transcatheter placement of an intravascular stent(s), open or percutaneous, including radiological supervision and interpretation and including angioplasty within the same vessel, when performed; initial vein	37238
Transcatheter placement of an intravascular stent(s), open or percutaneous, including radiological supervision and interpretation and including angioplasty within the same vessel, when performed; each additional vein (List separately in addition to code for primary procedure)	37239

Procedure Description	CPT®
Transluminal balloon angioplasty (except dialysis circuit), open or percutaneous, including all imaging and radiological supervision and interpretation necessary to perform the angioplasty within the same vein; initial vein	37248
Transluminal balloon angioplasty (except dialysis circuit), open or percutaneous, including all imaging and radiological supervision and interpretation necessary to perform the angioplasty within the same vein; each additional vein (List separately in addition to code for primary procedure)	37249

Endovascular treatment of intracerebral pathology

Indications

- Endovascular treatment of intracerebral pathology is medically necessary when recent clinical history as described in **General Information for Vascular Intervention Requests** documents **any** of the following:
  - Unruptured Aneurysms: Treatment is medically necessary at >5mm
  - Ruptured Aneurysms and/or Subarachnoid Hemorrhage at any size
  - Arteriovenous Malformations for any size

Non-indications

- Endovascular treatment is not considered medically necessary for intracranial atherosclerosis

Evidence Discussion

Cerebral aneurysm is a bulging, weakened area in the wall of a blood vessel resulting in an abnormal widening or ballooning greater than 50% of the vessel's normal diameter (width).

The causes of aneurysms are varied. They may be congenital or hereditary, or may be caused by other medical conditions or injury.

The risk of rupture for an asymptomatic aneurysm is 1% per year or less, this risk increases with size, size increase over time, family history, and history of prior subarachnoid hemorrhage (SAH). Endovascular treatment options for aneurysm include coil embolization, balloon remodeling, stent-assisted coil embolization, and/or flow diverters. Treatments for ruptured cerebral aneurysms include surgical clipping, endovascular coiling and/or use of flow diverters. Stenting of a ruptured aneurysm is associated with increased morbidity and mortality and is only considered when less risky options are not available. Treatment should be done early to prevent re-rupture. With

conservative management, the risk of aneurysm re-bleeding is 20% to 30% in the first month and then approximately 3% per year.

Most brain AVMs are sporadic and do not have an underlying genetic cause. Conservative management, endovascular embolization, radiation and operative resection are four modalities that can be considered in the treatment of brain AVM. These modalities may be performed either in isolation or in combination.

Intracranial atherosclerosis: Stroke or TIA (transient ischemic attack) can be caused by symptomatic intracranial atherosclerosis. For individuals with cerebral ischemia attributable to stenosis of an intracranial artery, the mainstay of treatment consists of risk factor modification and medications. Angioplasty and/or stenting is generally not recommended given the low rate of stroke on medical management and the inherent peri-procedural risk of endovascular treatment.

Middle Meningeal Artery Embolization for Chronic Subdural Hematoma

Indications

Middle Meningeal Artery embolization (MMAE) is considered medically necessary in an individual with any of the following clinical scenarios:

- Asymptomatic chronic subdural hematoma measuring ≥8mm on imaging
- Symptomatic chronic subdural hematoma as an adjunct to surgical decompression
- Chronic subdural hematoma in the setting of a coagulopathy on antiplatelet therapy and/or unable to undergo surgical drainage
- Prophylactic embolization after surgical evacuation (even without evidence of post-operative chronic subdural hematoma recurrence)

Evidence Discussion

Chronic subdural hematoma (cSDH) is a common neurological disorder primarily affecting the elderly and has been associated with substantial morbidity and mortality. Surgical drainage has historically been the definitive management strategy for symptomatic cSDH. This has been associated with significant morbidity and recurrence rates up to 5-30%. Middle meningeal artery embolization (MMAE) was initially reported as an option for treatment of cSDH over two decades ago. Since that time, multiple studies have been performed comparing the safety and efficacy of MMAE compared to surgical drainage. A meta-analysis pooling 20 studies with 1416 patients, 718 who underwent MMAE and 698 who were conventionally managed, reported lower rates of recurrence (4.8% vs 21.5%), reoperation (4.4% vs 16.4%), and complications (1.7%-4.9%), in the groups of patients who underwent MMAE. This has been supported even in patients with thrombocytopenia or on anticoagulation.

A proposed treatment algorithm for cSDH with the use of MMAE has been published. The algorithm supports MMAE alone for asymptomatic (including headaches) cSDH with subdural ≥ 8mm in size and ± midline shift. For patients with symptomatic or large cSDH with >5 mm midline shift, MMAE is supported as adjunct to surgery to decrease risk of recurrence.

Additional studies have evaluated the safety of MMAE in the elderly (65-79 years old) and advanced elderly (≥ 80 years) with cSDH, and found it to be safe and effective in management of cSDH.

A recent systematic review and meta-analysis comparing middle meningeal artery (MMA) embolization to conventional management, found that middle meningeal artery embolization decreased treatment failure and the need for surgical rescue without furthering the risk of morbidity and mortality, compared to conventional management. The study authors recommended considering MMA embolization in the management of chronic subdural hematoma.

Idiopathic intracranial hypertension (IIH)

Venous sinus stenting for treatment of IIH is considered medically necessary under the following conditions (All must be present):

- Indication is for papilledema and risk for vision loss
- Elevated ICP on spinal tap of > 25 cm H2O
- Failed medical therapy including lifestyle changes, diuretics and acetazolamide therapy
- Documented venous sinus stenosis (> 30%) with a significant pressure gradient across the stenosis (>8 mmHg) during diagnostic catheter venogram under local anesthetic.
- Patient must be able to tolerate dual anti-platelet therapy (ASA and clopidogrel) for 3-6 months.

Treatment for other indications including tinnitus or headache without is not supported given the decreased benefit compared to procedural risk and lack of long-term durability data

Evidence Discussion

In 2018, a consensus guideline for management of idiopathic intracranial hypertension (IIH) was published by (Mollan et al)[1]. In this document, they stated that the role of neurovascular stenting was not yet established for patients with acute IIH to prevent vision loss. They felt it was not indicated for patients with headache but not at risk for vision loss.

[1] Mollan SP, Davies B, Silver NC, et al. Idiopathic intracranial hypertension: consensus guidelines on management. J Neurol Neurosurg Psychiatry. 2018 Oct;89(10):1088-1100. doi: 10.1136/jnnp-2017-317440

(Shields et al) published a single institution retrospective review of 42 patients over 6 years who underwent venous sinus stenting.[2] The mean follow-up time was 25.6 months (8.7- 60.7 months). All patients had clinical symptoms including headaches, visual disturbances and papilledema. Post intervention follow-up showed resolution of papilledema in 74% and complete resolution of headaches in 43%. Two patients required re-intervention and one patient experienced in-stent thrombosis.

In 2019, Patsalides published short-term data on pressure measurement changes and reduction in medication requirements in 50 patients who underwent venous sinus stenting. [3]They noted that 94% of patients had a decrease in CSF pressure post procedure. There was a 45% reduction in mean ICP at 3 months. The average dose of acetazolamide decreased for 950 mg to 300 mg at the 3-month follow up with 70% percent of the patients being able to discontinue their acetazolamide therapy completely at the 3-months.

In 2019 (Nicholson et al) published a systematic review and meta-analysis of venous stenting for IIH. A total of 474 patients were included in the analysis with mean follow-up of 18 months. The outcomes assessed were resolution of papilledema, headaches and pulsatile tinnitus. They also assessed the rate of recurrence and complications. The overall rate of improvement of papilledema was 93.7% with improvement or resolution of headache in 79.6%. Pulsatile tinnitus resolved in 90.3% of patients. The recurrence rate was 9.8% and complication rate of 1.9%.[4]

Raoof et al also noted that although some studies have shown significant improvement in papilledema and headache, there was also a complication rate of 7.4% with 10.3% of patients requiring repeat intervention. They also agreed with Mollan et al regarding long-term data concerning safety and efficacy was still lacking. They concluded that neurovascular stenting be reserved for carefully selected patients with clear evidence of elevated pressure gradient across a stenosis.[5]

Most recently, Azzam et al published an updated meta-analysis of venous stenting for IIH in April 2024. This included 36 studies involving 1066 patients to evaluate the safety and efficacy of venous sinus stenting in IIH. Clinical outcomes were demonstrated improvement in tinnitus (95%), papilledema (89%), visual disturbances (88%), and headache (79%).6 However, they noted that 8.35% of patients experienced treatment failure, characterized by worsening symptoms and recurrence of IIH. They also noted a total complication rate of 5.35%, including subdural hemorrhage, urinary tract infection,

[2] Shields LBE, Shields CB, Yao TL, Plato BM, Zhang YP, Dashti SR. Endovascular Treatment for Venous Sinus Stenosis in Idiopathic Intracranial Hypertension: An Observational Study of Clinical Indications, Surgical Technique, and Long-Term Outcomes. World Neurosurg. 2019 Jan;121:e165-e171. doi: 10.1016/j.wneu.2018.09.070

[3] Patsalides A, Oliveira C, Wilcox J, et al. Venous sinus stenting lowers the intracranial pressure in patients with idiopathic intracranial hypertension. J NeuroIntervent Surg 2019;11:175–178

[4] Nicholson P, Brinjikji W, Radovanovic I, et al. Venous sinus stenting for idiopathic intracranial hypertension: a systematic review and meta-analysis. J Neurointerv Surg. 2019 Apr;11(4):380-385. doi: 10.1136/neurintsurg-2018-014172

[5] Raoof N, Hoffmann J. Diagnosis and treatment of idiopathic intracranial hypertension. Cephalalgia. 2021 Apr;41(4):472-478. doi: 10.1177/0333102421997093.

stent thrombus formation and others. They concluded that venous sinus stenting was a safe and effective treatment option for IIH patients who are unresponsive to medical therapy or have significant visual symptoms. However, long-term outcomes and safety of the procedure require further investigation.[6]

[6] Azzam AY, Mortezaei A, Morsy MM, et al. Venous sinus stenting for idiopathic intracranial hypertension: An updated Meta-analysis. J Neurol Sci. 2024 Apr 15;459:122948. doi: 10.1016/j.jns.2024.122948.

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